Part 11 · The Escape Challenge

Five gates, each a calculation. Each gives you one digit. Collect all five to unlock the exit code.

□ GATE 1 — The Graph Gate

Solve $x+3y=6$ and $2x-3y=12$ graphically (Example 1). Take the value of x at the intersection point.

Digit: □

□ GATE 2 — The Ratio Gate

For $x+2y-4=0$ and $2x+4y-12=0$, are the lines parallel, intersecting, or coincident? Take the number of solutions (0, 1, or use 9 for infinite).

Digit: □

□ GATE 3 — The Substitution Gate

Solve $x+2y=3$ and $7x-15y=2$. Take the numerator of y (i.e. 19, since y = 19/29).

Digit: □

□ GATE 4 — The Elimination Gate

Solve $9x-4y=2000$ and $7x-3y=2000$. Take x divided by 1000.

Digit: □

□ GATE 5 — The Digit Gate

A two-digit number and its reverse sum to 66, digits differ by 2. Take the tens digit of the larger number.

Digit: □

EXIT CODE: □ □ □ □ □

*Two lines, three possible relationships, one ratio test to tell them apart — and two clean algebraic methods when a graph will not give you an exact answer. That is the whole chapter. *